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Are Current Law Enforcement Strategies Associated with a Lower Risk of Repeat Speeding Citations and Crash Involvement? A Longitudinal Study of Speeding Maryland Drivers

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Abstract

PURPOSE—To determine whether traffic court appearances and different court verdicts were associated with risk of subsequent speeding citations and crashes.

METHODS—A cohort of 29,754 Maryland drivers ticketed for speeding who either went to court or paid fines by mail in May/June 2003 was followed for 3 years. Drivers appearing in court were categorized by verdicts: 1) not guilty, 2) suspension of prosecution/no prosecution (STET/NP), 3) case dismissed, 4) probation before judgment and fines (PBJ), or 5) fines and demerit points. Cox proportional hazard models were used to estimate adjusted hazard ratios (AHR).

RESULTS—Court appearances were associated with lower risk of subsequent speeding citations (AHR = 0.92; 95% CI: 0.88-0.96), but higher risk of crashes (AHR=1.25; 95% CI: 1.16-1.35). PBJ was associated with significantly lower repeat speeding tickets (AHR = 0.83; 95% CI = 0.75-0.91) and a non-significant decrease in crashes (AHR = 0.87; 95% CI 0.75-1.02). Both repeat speeding tickets and subsequent crashes were significantly lower in the STET/NP group.

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CONCLUSIONS—PBJ and STET/NP may reduce speeding and crashes, but neither verdict eliminated excess crash risk among drivers who choose court appearances. Randomized controlled evaluations of speeding countermeasures are needed to inform traffic safety policies.

Keywords

traffic accidents; safety; risk factors; speeding; motor vehicle crashes; law enforcement

INTRODUCTION

Speeding threatens public health worldwide (1-3), by increasing both motor vehicle crash risk and likelihood of crash mortality and morbidity (4-19). In the United States, speeding contributes to a third of fatal crashes, an estimated 11,674 deaths in 2008 (20). A primary countermeasure for speeding is enforcing speed limits by punishing lawbreakers. License suspension/revocation significantly reduced subsequent traffic violations and crashes (21) and traffic convictions, especially speeding convictions that included points, reduced involvement in fatal crashes for several months after the conviction (22). Despite these measures, speeding remains widespread (23-25); active police enforcement reduces speeding around the targeted area for a limited period after it ends (26, 27). More severe penalties were not associated with fewer subsequent speeding citations (28).

It is unclear how to maximize the effectiveness of speeding enforcement. Law enforcement can be understood as a behavior modification system that includes negative feedback for undesirable behavior and attempts to modify individual attitudes. Individual perceptions, interpersonal influences, and community settings all affect behavior (29).

In Maryland, drivers who receive speeding tickets can elect to pay fines by mail or appear in traffic court, where cases can be upheld, dismissed or changed to less severe charges and penalties. In traffic court, communications between judges and ticketed drivers are analogous to tailored individual health communication between physicians and patients (30). Traffic court proceedings, coupled with other negative consequences of speeding citations, may provide a stronger deterrent to speeding violations than paying fines by mail. Relatively little is known about the impact of traffic court appearance and its differing verdicts on road safety among speeding drivers. In this study, we investigated the associations of court appearance and the different verdicts rendered for a speeding ticket with both subsequent speeding citations and police-reported crashes by following a cohort of licensed Maryland drivers ticketed for speeding from 2003 to 2006.

MATERIALS AND METHODS

Data sources

We used Maryland driver licensure data from the Maryland Motor Vehicle Administration (MVA), traffic citation and court disposition data from Maryland District Court, and crash data from the Maryland Automated Accident Reporting System, and merged them using driver license numbers.

Study sample and design

We identified 30,603 individuals with a valid Maryland non-commercial driver license who settled a speeding citation in May/June 2003, and divided them into two groups: those who chose court appearances (54%; n=16,645) and those who paid fines by mail (43%; n=13,109). We excluded 549 (2%) drivers who had duplicate records and 301 (1%) drivers who failed to pay the fine or appear in court.

We further categorized those who went to court into 5 groups based on the verdicts they received: 1) not guilty (8%), 2) case dismissed (DMIS, 6%), 3) suspension of the prosecution and no prosecution (STET/NP, 5%), 4) probation before judgment (PBJ) and fines (48%), and 5) fines and demerit points (28%). We excluded 149 (1%) drivers who received PBJ alone and 531 (3%) records with missing case disposition information.

We followed this cohort of drivers from July 2003 through June 2006 to ascertain two separate outcomes: receipt of a subsequent speeding citation and involvement in a police-reported crash. Study subjects were censored after their first repeat speeding ticket and after their first police-reported crash.

Covariates

Demographic characteristics, including age, gender, and race, driving history, and index speeding violation information were analyzed. We excluded groups whose race was coded as Asian, Native American, or Other/Unknown because each group was too small for meaningful analyses; the combined group was only 5% of the study cohort. The variable denoting Hispanic origin in motor vehicle administration records had a high percentage of missing data so it was not used. As a surrogate for socioeconomic status, we used the median annual household income of the driver's residential zip code, as published in the 2000 US census. We then divided this variable into groups, \$30,000, \$30,001-\$50,000, \$50,001-\$70,000, and >\$70,000, based on 1999 Federal Poverty Guidelines (31). Driving history encompassed speeding violations, alcohol-related violations, and crashes of each eligible driver during the 3 years before May 2003. From the index speeding violation, we extracted degree of speeding over the limit, amount of fines, and the county where the violation occurred.

Statistical analysis

Survival analyses, including Kaplan-Meier curves, log-rank, and Wilcoxon tests, were used to evaluate the effect of court appearances versus paying fines by mail, and the effects of different court rulings versus not guilty verdicts. For the survival analyses, the time variable was days from the start of the follow-up (July 1, 2003) until the first speeding violation or involvement in a police-reported crash. Drivers who had no repeat offenses or crashes found in the databases were censored at 1,095 days (3 years).

We used Cox proportional hazards models for multivariable analysis to calculate hazard ratios (HRs) and 95% confidence intervals (CIs). The presence of effect modification was examined for each covariate. To build the model, each covariate was tested and included in the final model if the regression coefficient of the main effect varied by 10% or more. We also checked the proportionality assumption of the proportional hazards model by adding the interaction between log survival time and the main effect in the model. A non-significant interaction term ($P > 0.05$, 2-sided) supported the assumption that the hazard rates for the two study groups did not vary with time during follow-up. The final models were adjusted for age, gender, race, categories by which drivers exceeded the speed limit for the index violation, prior speeding tickets, prior alcohol traffic tickets, and prior police-reported crashes. SAS software (version 9.1; SAS Institute Inc., Cary, NC) was used for all data analyses.

RESULTS

Driver characteristics: court appearances and verdicts

Among drivers who dealt with a speeding citation in May/June 2003, more than 54% of them went to court. Compared with drivers who paid fines by mail, they were more likely to

be younger than 25, African American, and to have been cited for traveling in excess of 20 mph above the speed limit (Table 1). Fewer drivers who went to court lived in zip codes with household incomes greater than \$70,000. In addition, a higher proportion of drivers who went to court had a history of speeding, alcohol-related violations, and crashes.

Once in court, drivers who were age 30 or older, female or with no more than one prior speeding violation were more likely to be placed on PBJ, whereas drivers who were younger than age 30, male, traveling more than 20 mph above the speed limit, or who had prior speeding violations or crashes were more likely to be fined and assigned points (Table 2). Neither race nor median household income of drivers' zip codes appeared to be associated with receiving PBJ. Drivers, traveling less than 15 mph above the posted limit, were more likely to receive STET/NP. About half of drivers who had alcohol-related violations prior to May 2003 were given STET/NP for speeding compared with about 4% of drivers without alcohol violations.

Repeat speeding citations

The likelihood of repeat speeding tickets and subsequent crashes decreased with age (Table 3); drivers younger than 21 had risks at least twice those of drivers age 50 or older. Male gender, being African American, a history of speeding violations, and prior police-reported crashes were significantly associated with both subsequent speeding citations and crash involvement. Speeding more than 15 mph above the limit was associated with repeat speeding tickets, but not with an increased crash risk.

Between July 2003, and June 2006, 39.3% of drivers who went to court and 36.4% of drivers who paid fines by mail were cited at least once for speeding. After adjustment for potential confounders, the direction of the association changed such that court appearance was associated with significantly lower risk of being cited for speeding as compared with paying fines by mail (AHR 0.92, 95% CI: 0.88-0.96) (Table 3).

Compared with those who were found not guilty, drivers placed on PBJ had significantly lower risk of receiving a subsequent speeding ticket (AHR 0.83, 95% CI: 0.75-0.91). The lowest risk of being cited again for speeding was observed among drivers who received STET/NP (AHR 0.70, 95% CI: 0.60-0.82). In contrast, the risk for receiving repeat speeding citations among drivers who were penalized with fines and points was not significantly different from those found not guilty. Those whose cases were dismissed had a borderline significant lower risk (AHR 0.86, 95% CI: 0.75-1.00) (Table 4).

Police-reported crashes

During follow-up, 11.6% of drivers who chose court appearance and 8.4% of drivers who paid fines by mail were involved in a road crash. The adjusted HR for involvement in a subsequent crash for court appearance versus paying fines by mail was 1.25 (95% CI: 1.16-1.35) (Table 3).

Compared with the verdict of not guilty, only STET/NP was associated with significantly lower crash risk (AHR 0.70, 95% CI: 0.54-0.89) (Table 4). The lower crash risk for those placed on PBJ was nearly significant after adjustment for other predictors (AHR 0.87, 95% CI: 0.75-1.02). Drivers who received fines and points had risk similar to those whose verdict was not guilty (AHR 1.02, 95% CI: 0.87-1.20).

DISCUSSION

Our study is one of the first to address court verdicts and associated outcomes among speeding drivers. Traffic courts exist in many jurisdictions in the United States but their

impact on traffic safety is unclear. We found that compared with those who paid fines by mail, drivers who went to court to settle a speeding citation had a significantly higher risk of subsequent crash involvement despite having a significantly lower risk for a repeat speeding citation after adjustment for other independent risk factors. Among those who went to court, receiving any type of legal penalty was associated with a lower risk of subsequent speeding violations and crashes compared with a verdict of not guilty; however, only STET/NP's associations with both outcomes were statistically significant. PBJ was associated with significantly fewer repeat speeding tickets and a non-significant decrease in crashes.

Some of the reduction in repeat speeding violations among drivers who went to court might have been attributable to decreased subsequent driving exposure in Maryland, particularly among younger drivers who attended colleges or joined the military; however, we adjusted for age and this condition would apply to both groups.

The majority of drivers traveling above the posted speed limit are not cited, and the use of speeding citations as an indicator for speeding behavior greatly underestimates its prevalence. However, this problem would affect all the study groups included in the analysis.

The current study analyzed a cohort of nearly 30,000 drivers, in which we were able to simultaneously adjust for many important covariates. Unlike most previous studies that examined driver behavior in a location with intensive speed enforcement (26, 27, 32-34), this study followed individuals over time to better understand how judicial measures affect people who violate the law. Moreover, we studied the association of traffic court and its verdicts with not only speeding behavior, but also with crash occurrence because preventing crashes is the main purpose of traffic law enforcement.

The increased risk of crashes associated with court appearance likely reflects the high-risk characteristics of drivers who chose this approach rather than being a true causal relationship. Those who chose to appear in court had more prior violations and crashes. Consistent with previous research, we found that prior speeding violations and crashes were independent predictors for repeat speeding tickets and subsequent crashes (28, 35-37). However, driving histories cannot fully capture risk-taking propensity because most moving violations, including alcohol-impaired driving, are not detected by police.

The two verdicts associated with significantly lower risk of speeding recidivism among drivers who went to court, STET/NP and PBJ, provide drivers with incentives to comply with speed limits because they both result in reinstatement of charges if the driver is given another ticket (38). However, the decreased risk of both repeat speeding tickets and subsequent crashes among drivers on STET/NP might have been due to license suspensions/revocations because many of these drivers had prior alcohol traffic violations for which suspension is the standard penalty (39). Suspended drivers may tend to reduce their driving or comply with speed limits to avoid drawing attention to their driving without a license. The finding of lower risk of recidivism among drivers with PBJ is consistent with previous research among Maryland drivers (28), however, this also could be due to judges deciding to give PBJ to people correctly perceived as less likely to commit another violation. PBJ also appears to have stronger deterrent effects relative to more serious consequences among first-time alcohol traffic offenders (40). Adjustment for demographic variables and driving history lessened the potential for confounding of verdicts with other driver characteristics.

Sending more drivers to traffic court does not appear to be an effective approach to reducing crash risk. Maryland speeders who choose to go to court are motivated by both the opportunity to receive the lesser penalty of PBJ and the chance of having charges dismissed should the ticketing officer fail to appear. More than half the drivers in our study who went

to court were placed on PBJ. Programs that result in drivers being able to keep violations off their official records, such as traffic violator schools, have been associated with increases in crashes (21, 41, 42), but this study observed no increased crash risk among drivers placed on PBJ compared with those found not guilty. Like other drivers who went to court, drivers receiving PBJ had an elevated crash risk compared with drivers who paid fines by mail. Paying fines by mail, accompanied by points, is virtually identical to receiving a penalty of fines and points in court, yet the likelihood of crashing was more than twice as high among those who went to court. A randomized trial would provide more definitive answers about the effects of court appearances. Our study suggests that more severe penalties (i.e. fines and demerit points) have limited effectiveness in reducing speeding recidivism and preventing crashes among drivers ticketed for speeding in the current system of traffic law enforcement. Reviews of studies addressing the effectiveness of countermeasures on traffic violations have concluded that receiving an occasional fine for speeding is merely an inconvenience rather than an effective deterrent for some drivers (43). Some hard-core speeding drivers also may not be deterred by points until they have accumulated enough of them to be subject to license suspension (2, 43). Stepped-up enforcement appears to deter alcohol-impaired driving (44). Recent studies (32-34, 45, 46) have reported that speed cameras significantly reduce speeding violations and crash involvements due to higher detection and punishment rates, suggesting that the certainty of punishment may be more effective than severity of penalties in deterring speeding behavior and reducing crashes. Similarly, swiftness and certainty of punishment have been shown to be effective in reducing fatal crashes involving alcohol violations (47).

Traffic court serves important societal purposes. Findings of this evaluation bring into question whether or not traffic court hearings for speeding drivers are fulfilling those purposes adequately. Courts require substantial financial resources and infrastructure and often face a backlog of traffic violation cases (48, 49). Furthermore, it is difficult for law enforcement to provide sustained surveillance of all speeding motorists. Studies that measure speeding behavior directly through driver observations should be conducted to ascertain the relative effectiveness of court appearances, various court verdicts, traditional speeding tickets, and speed cameras. Future research is needed to determine the effects of speed cameras on driver behavior by following those who have received speed camera tickets over time, including observations in areas where speed cameras are not located. Intelligent speed adaptation, an advanced in-vehicle technology that receives information about speed limits and slippery road conditions (50), also is worthy of study.

Speeding is a serious problem that merits rigorous controlled intervention trials to determine which approaches are most effective in reducing its prevalence.

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Abbreviations

AHR	adjusted hazard ratio
DMIS	case dismissed
STET	suspension of prosecution
NP	no prosecution
PBJ	probation before judgment

TABLE 1

Characteristics and Driving Histories of Maryland Licensed Drivers Who Either Paid Fines by Mail or Appeared in Court in May/June 2003 Following a Speeding Citation

Characteristic	Paid Fines by Mail No. (%)	Appeared in Court No. (%)
Age (years) *		
20	2,056 (15.7)	3,543 (21.3)
21—24	1,662 (12.7)	2,336 (14.0)
25—29	1,866 (14.2)	2,413 (14.5)
30—39	3,132 (23.9)	3,776 (22.7)
40—49	2,369 (18.1)	2,767 (16.6)
50	2,024 (15.4)	1,810 (10.9)
Gender *		
Female	4,871 (37.3)	6,341 (38.2)
Male	8,193 (62.7)	10,276 (61.8)
Race *		
African American	2,761 (22.7)	4,392 (27.9)
Caucasian	9,365 (77.3)	11,339 (72.1)
Median household income ^{*a}		
\$30,000	741 (5.6)	935 (5.6)
\$30,001-\$50,000	3,852 (29.4)	5,395 (32.4)
\$50,001-\$70,000	5,337 (40.7)	6,870 (41.3)
>\$70,000	3,179 (24.3)	3,445 (20.7)
Speed over the limit ^{*b}		
1-15 mph	4,280 (33.6)	3,473 (21.5)
16-20 mph	5,407 (42.3)	6,277 (38.9)
>20 mph	3,083 (24.1)	6,385 (39.6)
Prior speeding violations ^{*c}		
0	4,679 (35.7)	646 (3.9)
1	5,342 (40.7)	10,511 (63.1)
2	3,088 (23.6)	5,488 (33.0)
Prior alcohol-related violations ^{*c}		
0	12,836 (97.9)	15,973 (96.0)
1	273 (2.1)	672 (4.0)
Prior police-reported crashes ^{*c}		
0	11,714 (89.4)	14,262 (85.7)
1	1,395 (10.1)	2,383 (14.3)
Total	13,109 (100)	16,645 (100)

* $P < 0.05$.

^a Median annual household income for the zip code of the driver's residence from 2000 US census data.

^b As documented on the index speeding citation.

^cOccurred prior to index citation between May 1, 2000 and April 30, 2003.

Characteristics and Driving Histories of Maryland Licensed Drivers by Verdicts After Appearing in Court to Settle a Speeding Citation in May/June 2003

TABLE 2

Characteristic	Court verdicts n=15,935				
	Not Guilty (n=1,292)	Dismissal (n=966)	STET/NP (n=904)	PBJ & Fines (n=8,046)	Fines & Points (n=4,727)
	No. (%) ^a	No. (%) ^a	No. (%) ^a	No. (%) ^a	No. (%) ^a
Age (years) [*]					
20	282 (8.3)	176 (5.2)	186 (5.5)	1,640 (48.3)	1,110 (32.7)
21—24	182 (8.3)	133 (6.1)	177 (8.1)	915 (41.7)	790 (36.0)
25—29	200 (8.7)	151 (6.6)	178 (7.8)	1,009 (44.1)	750 (32.8)
30—39	291 (8.0)	243 (6.7)	191 (5.3)	1,843 (50.8)	1,058 (29.2)
40—49	211 (7.9)	166 (6.2)	115 (4.3)	1,523 (56.7)	669 (24.9)
50	126 (7.2)	97 (5.6)	57 (3.3)	1,116 (63.9)	350 (20.1)
Gender [*]					
Female	431 (7.2)	351 (5.9)	223 (3.7)	3524 (58.7)	1,472 (24.5)
Male	859 (8.7)	613 (6.2)	678 (6.8)	4509 (45.5)	3,247 (32.8)
Race [*]					
African American	372 (8.9)	355 (8.5)	248 (5.9)	2,112 (50.6)	1,091 (26.1)
Caucasian	844 (7.8)	533 (4.9)	625 (5.7)	5,588 (51.3)	3,296 (30.3)
Median household income ^{*b}					
\$30,000	74 (8.6)	66 (7.6)	67 (7.7)	437 (50.5)	222 (25.6)
\$30,001-\$50,000	460 (8.9)	231 (4.5)	303 (5.9)	2,554 (49.6)	1,599 (31.1)
\$50,001-\$70,000	490 (7.4)	386 (5.9)	429 (6.5)	3,354 (50.9)	1,973 (29.4)
>\$70,000	268 (8.1)	283 (8.5)	105 (3.2)	1,701 (51.1)	969 (29.1)
Speed over the limit ^{*c}					
1-15 mph	272 (8.1)	310 (9.3)	309 (9.2)	1,686 (50.4)	770 (23.0)
16-20 mph	403 (6.6)	316 (5.2)	249 (4.1)	3,539 (58.4)	1,556 (25.7)
>20 mph	495 (8.2)	279 (4.6)	242 (4.0)	2,693 (44.5)	2,342 (38.7)
Prior speeding violations ^{*d}					
0	44 (7.1)	20 (3.2)	24 (3.9)	414 (66.8)	118 (19.0)
1	812 (8.0)	588 (5.8)	492 (4.9)	6,105 (60.5)	2,103 (20.8)

Characteristic	Court verdicts n=15,935				
	Not Guilty (n=1,292)	Dismissal (n=966)	STET/NP (n=904)	PBJ & Fines (n=8,046)	Fines & Points (n=4,727)
	No. (%) ^a	No. (%) ^a	No. (%) ^a	No. (%) ^a	No. (%) ^a
2	436 (8.4)	358 (6.9)	388 (7.4)	1,527 (29.3)	2,506 (48.1)
Prior alcohol-related violations ^{*d}					
0	1,261 (8.2)	951 (6.2)	592 (3.9)	7,964 (52.0)	4,545 (29.7)
1	31 (5.0)	15 (2.4)	312 (50.2)	82 (1.0)	182 (29.3)
Prior police-reported crashes ^{*d}					
0	1,069 (7.8)	821 (6.0)	728 (5.3)	7,118 (52.1)	3,922 (28.7)
1	223 (9.8)	145 (6.4)	176 (7.7)	928 (40.8)	805 (35.4)

Abbreviations: STET/NP: suspension of the prosecution and no prosecution; PBJ: probation before judgment.

^{*} $P < 0.05$.
^a Row %.
^b Median annual household income for the zip code of the driver's residence from 2000 US census data.
^c As documented on the index speeding citation.
^d Occurred prior to index citation between May 1, 2000 and April 30, 2003.

TABLE 3

Adjusted Proportional Hazard Ratios (AHR) of Independent Predictors for Receiving a Subsequent Speeding Citation or Being Involved in a Police Reported Crash Among Maryland Licensed Drivers During Three Years After Settling a Speeding Ticket in May/June 2003

Independent Predictors ^a	Repeat Speeding Citation		Subsequent Crash	
	AHR	95% CI	AHR	95% CI
Paid fines by mail ^b	1	-	1	-
Court appearance	0.92	0.88-0.96	1.25	1.16-1.35
Age				
20	2.43	2.24-2.63	2.01	1.77-2.28
21—24	1.98	1.82-2.16	1.57	1.37-1.80
25—29	1.68	1.54-1.83	1.27	1.11-1.47
30—39	1.49	1.37-1.61	1.18	1.04-1.35
40—49	1.35	1.24-1.47	1.04	0.91-1.20
50 ^b	1		1	
Gender				
Female ^b	1		1	
Male	1.35	1.30-1.41	1.32	1.23-1.42
Race				
African American ^b	1		1	
Caucasian	0.94	0.90-0.99	0.68	0.63-0.73
Speed over the limit ^c				
1-15 mph*	1		1	
16-20 mph	1.06	1.00-1.11	1.04	0.92-1.19
>20 mph	1.18	1.12-1.24	0.98	0.89-1.09
Prior speeding violations ^d				
0 ^b	1		1	
1	1.28	1.20-1.36	1.10	1.00-1.23
2	1.99	1.86-2.13	1.39	1.24-1.56
Prior alcohol-related violations ^d				
0 ^b	1		1	
1	0.80	0.71-0.89	1.03	0.86-1.23
Prior police-reported crashes ^d				
0 ^b	1		1	
1	1.19	1.13-1.25	1.42	1.31-1.54

^a All the above predictors were included in the model.

^b Reference group.

^c As documented on the index speeding citation.

^d Occurred between May 1, 2000 and April 30, 2003 prior to index speeding citation.

Adjusted Proportional Hazard Ratios (AHR) for Receiving a Subsequent Speeding Citation or Being Involved in a Police Reported Crash Among Maryland Licensed Drivers by Court Verdict During Three Years After Settling a Speeding Ticket in May/June 2003

TABLE 4

Verdict ^a	Repeat Speeding Citation				Subsequent Crash			
	Yes No. (%) ^b	No No. (%) ^b	AHR	95% CI	Yes No. (%)	No No. (%)	AHR	95% CI
Not Guilty ^c	584 (45.2)	708 (54.8)	1	-	220 (17.0)	1,072 (83.0)	1	-
Dismissal	398 (41.2)	568 (58.8)	0.86	0.75-1.00	148 (15.3)	818 (84.7)	0.92	0.73-1.15
STET/NP	331 (36.6)	573 (63.4)	0.70	0.60-0.82	124 (13.7)	780 (86.3)	0.70	0.54-0.89
PBJ & Fines	2,806 (34.9)	5,240 (65.1)	0.83	0.75-0.91	1,130 (14.0)	6,916 (86.0)	0.87	0.75-1.02
Fines & Points	2,212 (46.8)	2,515 (53.2)	0.93	0.84-1.02	836 (17.7)	3,891 (82.3)	1.02	0.87-1.20
Paid fines by mail ^d	4,774 (36.4)	8,335 (63.6)			1,106 (8.4)	12,003 (91.6)		

Abbreviations: CI: confidence interval; STET/NP: suspension of the prosecution and no prosecution; PBJ: probation before judgment.

^a Age, gender, race, speed over the limit, prior speeding violations, prior alcohol-related violations, and prior police-reported crashes were included in the final model.

^b Row %.

^c Reference group.

^d For comparison of recidivism rates associated with different verdicts.